

Variable	Mean	Standard deviation	Minimum	Maximum
Age	34.5	10.2	21	55
Gender	0.5	0.5	0	1
Marital status	0.6	0.5	0	1
Education	12.5	1.5	9	16
Income	15.2	5.8	5	35
Health status	0.8	0.4	0	1
Employment status	0.7	0.5	0	1
Home ownership	0.9	0.3	0	1
Vehicle ownership	0.6	0.5	0	1
Life satisfaction	4.2	1.8	1	7
Subjective health	3.5	1.2	1	5
Life expectancy	78.5	3.2	70	85
Healthcare expenditure	12.1	4.5	5	25
Health insurance coverage	0.9	0.3	0	1
Healthcare utilization	2.5	1.5	0	5
Healthcare satisfaction	4.5	1.5	1	7
Healthcare access	3.8	1.2	1	5
Healthcare quality	4.1	1.4	1	5
Healthcare equity	3.9	1.3	1	5
Healthcare efficiency	4.0	1.4	1	5
Healthcare sustainability	3.7	1.3	1	5
Healthcare innovation	4.3	1.5	1	5
Healthcare leadership	4.4	1.6	1	5
Healthcare governance	4.2	1.4	1	5
Healthcare transparency	4.1	1.3	1	5
Healthcare accountability	4.0	1.2	1	5
Healthcare integrity	4.3	1.4	1	5
Healthcare ethics	4.4	1.5	1	5
Healthcare justice	4.2	1.3	1	5
Healthcare fairness	4.1	1.2	1	5
Healthcare equity	4.0	1.1	1	5
Healthcare efficiency	3.9	1.0	1	5
Healthcare sustainability	3.8	0.9	1	5
Healthcare innovation	3.7	0.8	1	5
Healthcare leadership	3.6	0.7	1	5
Healthcare governance	3.5	0.6	1	5
Healthcare transparency	3.4	0.5	1	5
Healthcare accountability	3.3	0.4	1	5
Healthcare integrity	3.2	0.3	1	5
Healthcare ethics	3.1	0.2	1	5
Healthcare justice	3.0	0.1	1	5
Healthcare fairness	2.9	0.1	1	5
Healthcare equity	2.8	0.1	1	5
Healthcare efficiency	2.7	0.1	1	5
Healthcare sustainability	2.6	0.1	1	5
Healthcare innovation	2.5	0.1	1	5
Healthcare leadership	2.4	0.1	1	5
Healthcare governance	2.3	0.1	1	5
Healthcare transparency	2.2	0.1	1	5
Healthcare accountability	2.1	0.1	1	5
Healthcare integrity	2.0	0.1	1	5
Healthcare ethics	1.9	0.1	1	5
Healthcare justice	1.8	0.1	1	5
Healthcare fairness	1.7	0.1	1	5
Healthcare equity	1.6	0.1	1	5
Healthcare efficiency	1.5	0.1	1	5
Healthcare sustainability	1.4	0.1	1	5
Healthcare innovation	1.3	0.1	1	5
Healthcare leadership	1.2	0.1	1	5
Healthcare governance	1.1	0.1	1	5
Healthcare transparency	1.0	0.1	1	5
Healthcare accountability	0.9	0.1	1	5
Healthcare integrity	0.8	0.1	1	5
Healthcare ethics	0.7	0.1	1	5
Healthcare justice	0.6	0.1	1	5
Healthcare fairness	0.5	0.1	1	5
Healthcare equity	0.4	0.1	1	5
Healthcare efficiency	0.3	0.1	1	5
Healthcare sustainability	0.2	0.1	1	5
Healthcare innovation	0.1	0.1	1	5
Healthcare leadership	0.0	0.1	1	5
Healthcare governance	0.0	0.1	1	5
Healthcare transparency	0.0	0.1	1	5
Healthcare accountability	0.0	0.1	1	5
Healthcare integrity	0.0	0.1	1	5
Healthcare ethics	0.0	0.1	1	5
Healthcare justice	0.0	0.1	1	5
Healthcare fairness	0.0	0.1	1	5
Healthcare equity	0.0	0.1	1	5
Healthcare efficiency	0.0	0.1	1	5
Healthcare sustainability	0.0	0.1	1	5
Healthcare innovation	0.0	0.1	1	5
Healthcare leadership	0.0	0.1	1	5
Healthcare governance	0.0	0.1	1	5

Involved Instructions	Values	a	b	c	d	(ext)	(Flags)
[ ]	#						

Initialized	(Flags)
a	b c d

4 ↙

# Dependence

Involved Instructions	Values	a	b	c	d (ext)	(Flags)
[1]	#1	1				
[2]	#2					↑ set zero



Load b, #2



Initialized	a	b	c	d	(Flags)
	1	1			

Fig: 2

Involved Instructions	Values	<u>Dependence</u>			
		$\{a\}$	$\{b\}$	c	d (ext) (Flags)
$[1][3]$	#1	1			
$[2][3]$	#2	$1 \leftarrow 1$			

combine

$[Set\ write = Op\ (Set\ read)]$

$$a = a + b$$

<u>Initialized</u>				
a	b	c	d	(Flags)
1	1			

Fig: 3

# Dependence

✓2

Involved Instructions	Values	a	b	c	d	(ext)	(Flags)
[1] [3]	#1	↑ <sub>set zero</sub>					
[2] [5]	#2	↑ <sub>set zero</sub>					
[4]	#3						

no state dependent upon #1



redundant code

✓4

Load a, #3

## Initialized

a	b	c	d	(Flags)
1	1	1		

Fig 4

✓2

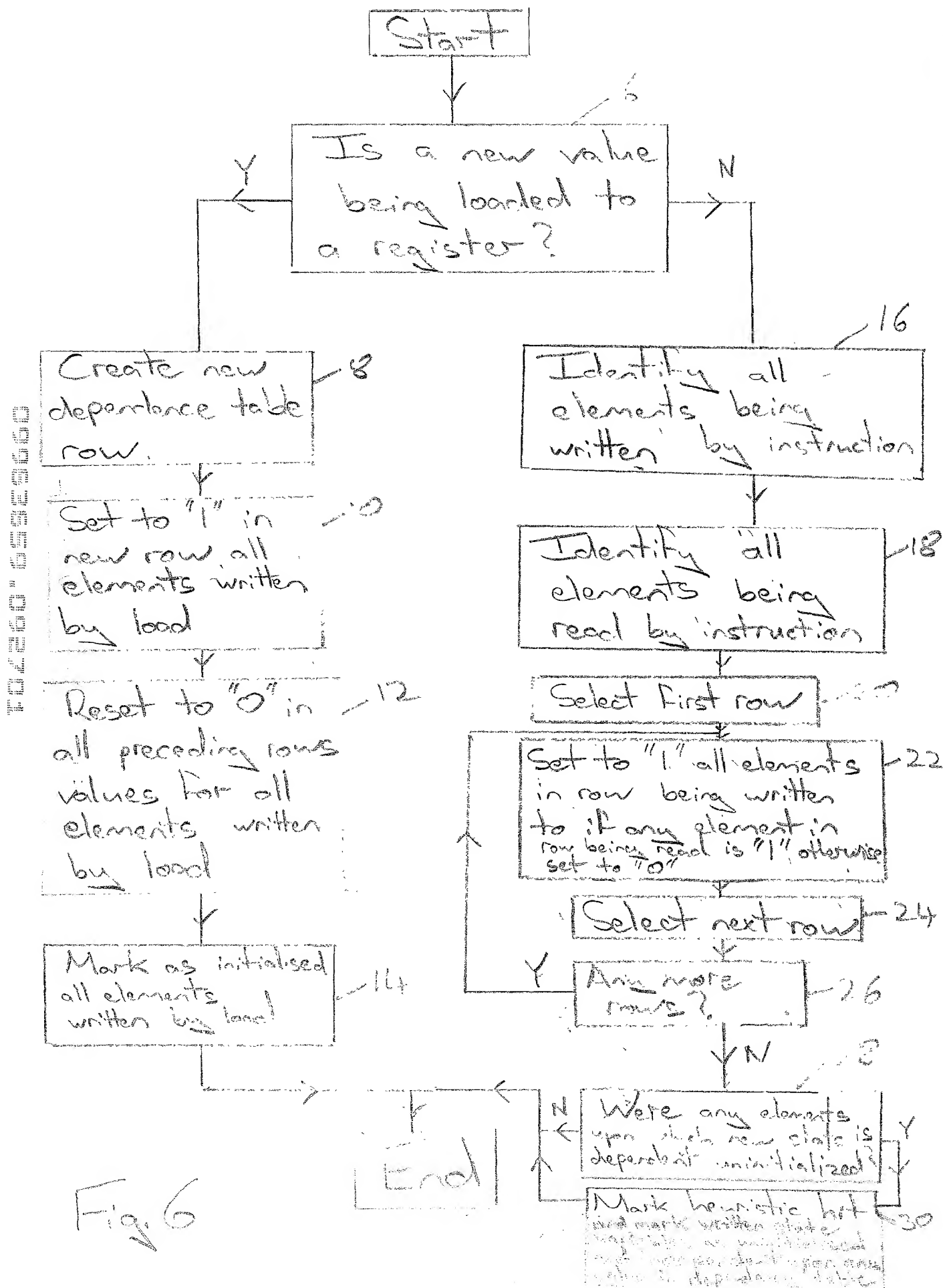
Involved Instructions	Values	Dependence			
		a	b	c	d (ext) (Flags)
[1111]	#1				
[1112]	#2				
[1113]	#3	←	←	←	combine

✓4

$$a = a + c$$

Initialized			
a	b	c*	d (Flags)
			1

Fig 5



112250" 2323232323

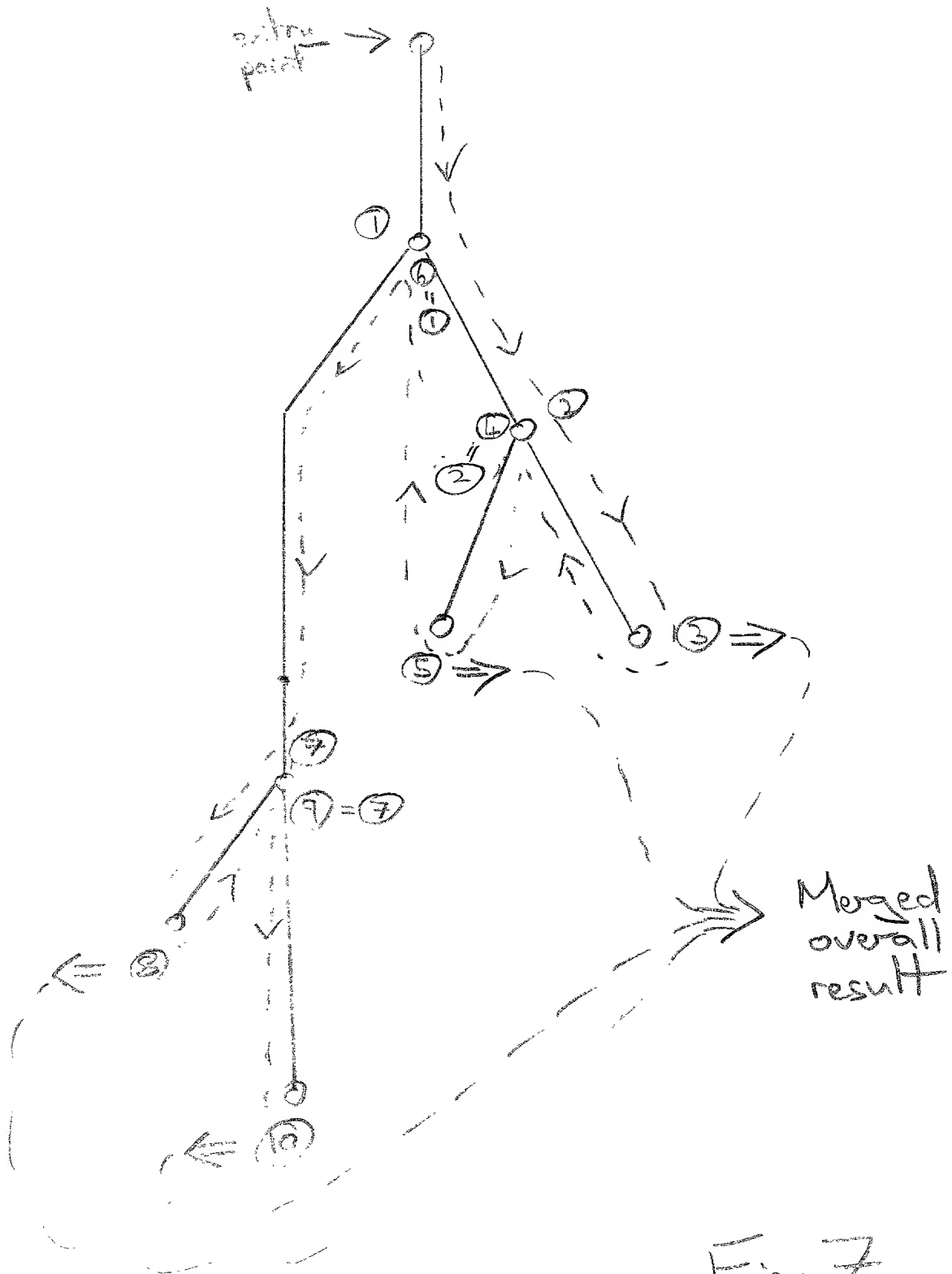


Fig. 7

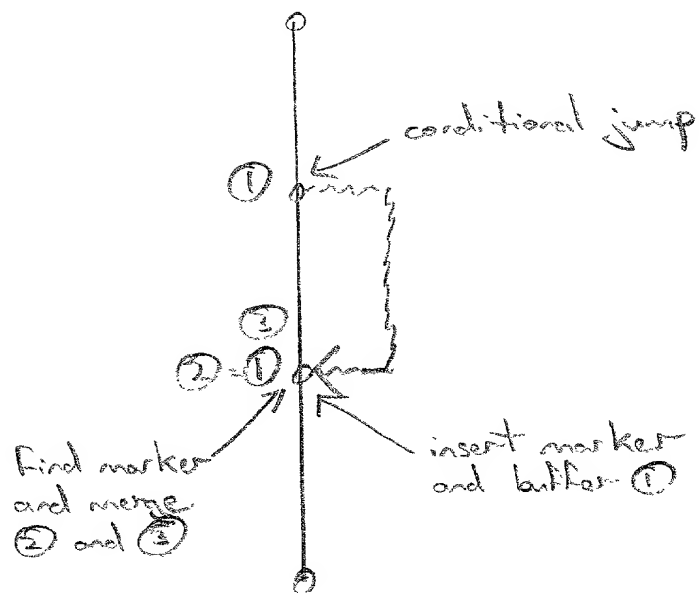


Fig. 8

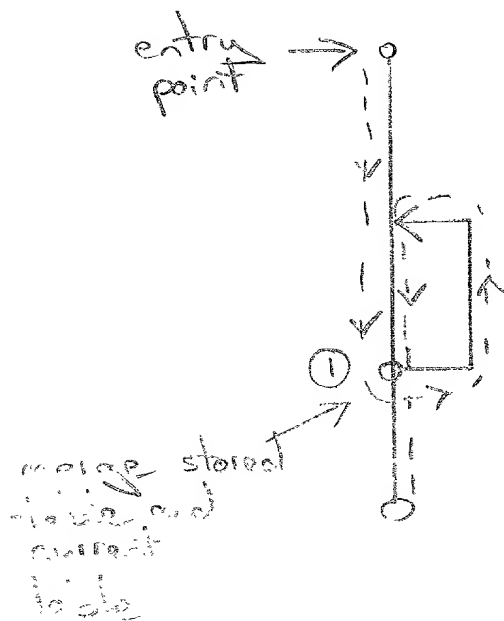
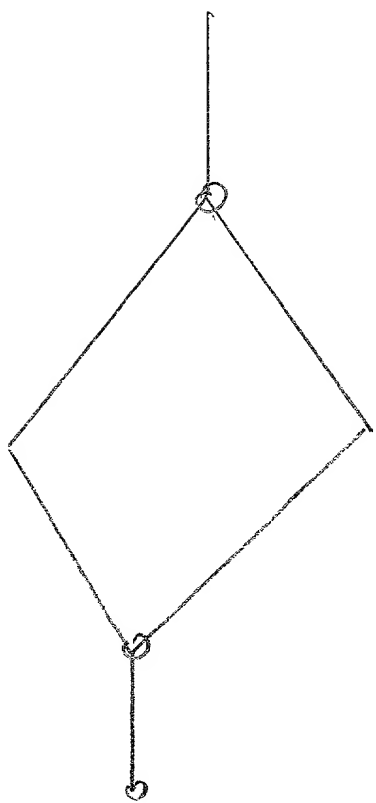


Fig. 9A



|||

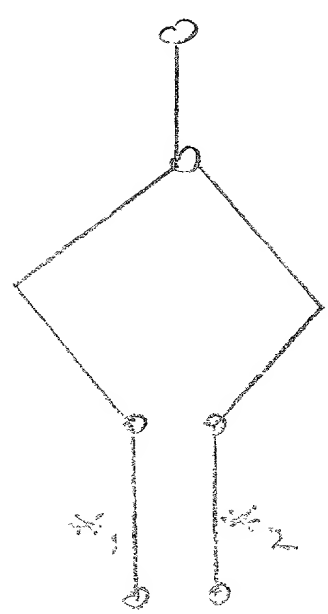


Fig. 9B

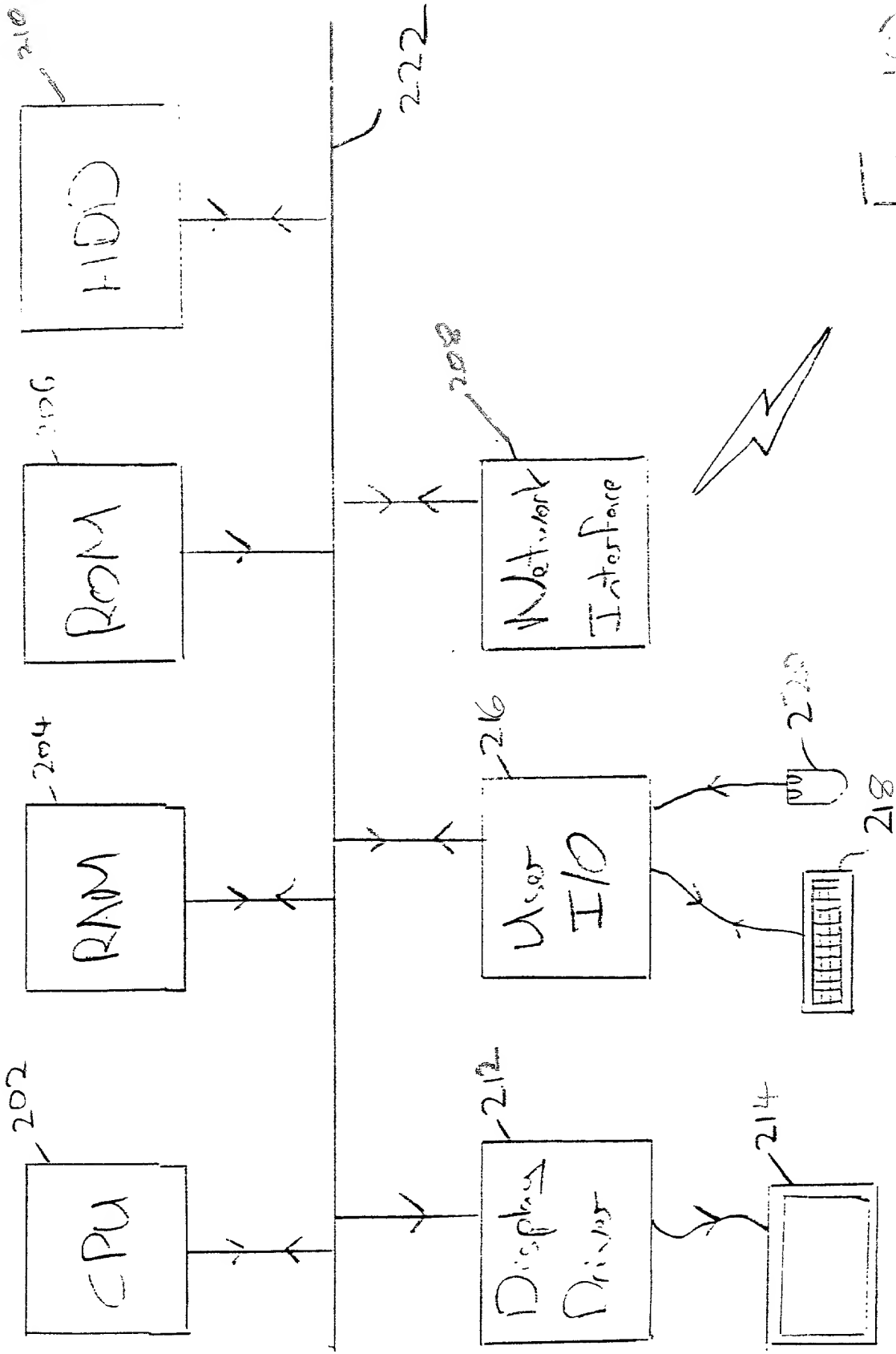


Fig. 10